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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,103	03/16/2004	Charles B. Whisman III	GES0001-100	3230
35138	7590	02/17/2006	EXAMINER	
COZEN O' CONNOR, P.C. 1900 MARKET STREET PHILADELPHIA, PA 19103-3508			HOPKINS, ROBERT A	
			ART UNIT	PAPER NUMBER
			1724	
DATE MAILED: 02/17/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/802,103

Applicant(s)

WHISMAN, CHARLES B.

Examiner

Robert A. Hopkins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 18-20,23,25-67,69 and 71-108 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 35-66,95 and 97-104 is/are allowed.
- 6) ☒ Claim(s) 18-20,23,25-34,67,69,71-94,96 and 105-108 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 18-20,23,25-34,67,69,71-94,96,105-108 are rejected under 35

U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The inclusion of ozone and hydrogen peroxide as reagents for the formation of hydroxyl radicals which is critical or essential to the practice of the invention, but not included in the claims is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). Examiner notes page 14 lines 30-31 and page 15 line 1 recite that the reaction of ozone containing and hydrogen peroxide containing reagents outside of the bore hole produces a further reagent, hydroxyl radicals, which are powerful oxidizers. Page 15 line 10 recites hydrogen peroxide will also individually react with iron to form hydroxyl radicals. Examiner also notes page 13 lines 12-19 gives a listing of various reagents for remediation, however only ozone, iron solutions, and hydrogen peroxide are disclosed as forming hydroxyl radicals upon reaction outside of the borehole. Therefore, examiner respectfully submits that because claims 18,67,86, and 88 include limitations of production of hydroxyl radicals, the limitation "two or more different reagents" is too broad, because not every reagent listed on page 13 lines 12-19, when contacted together, produces hydroxyl radicals. Therefore, examiner suggests the following claim language to be inserted directly after the first occurrence of

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"two or more different reagents" in claims 18,67,86, and 88: -- , wherein the two or more different reagents include at least one of ozone or iron solutions and hydrogen peroxide, --. Also , examiner suggests deleting "of said two or more reagents" in part d) of claim 18 and inserting – ozone and hydrogen peroxide or ozone and iron solutions--.

Correction is requested. Claims 19,20,23, 25-34,89-94,96 depend on claim 18 and hence are also rejected. Claims 69,71-85,105-108 depend on claim 67 and hence are also rejected. Claim 87 depends on claim 86 and hence is also rejected.

### ***Double Patenting***

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Applicant is advised that should claim 18 be found allowable, claims 86 and 88 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). Examiner notes that while the intended use of the method of claims 18, 86 , and 88 is to 1) treat groundwater and/or soil, 2) reduce organic agents dissolved, adsorbed or suspended in a body of water and/or soil, and 3) increase

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dissolved oxygen in groundwater and/or soil, all three claims include the exact same method steps in the body of the claims. Examiner notes that in order to differentiate between the claims, limitations should be included in the body of the claim which connects with the preamble. For example, in claim 86, a limitation e) could be included stating -- contacting the formed hydroxyl radicals alone or the formed hydroxyl radicals and other different reagents with the body of water and/or soil to reduce organic compound dissolved, adsorbed, or suspended in the body of water and/or soil --. Similar amendments to claims 18 and 88 would be required to prevent duplicate claim language.

***Allowable Subject Matter***

Claims 35-66,95,97-104 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Claim 35 recites "conducting a gaseous reagent comprising ozone through a first conduit residing in a bore hole and conducting a liquid reagent comprising hydrogen peroxide through a second conduit residing in said bore hole; ... ; forming hydroxyl radicals outside said bore hole by contacting of said gaseous and liquid reagents outside said bore hole". While Buehlman et al(6210073) teaches ozone as a gaseous reagent, Buehlman et al fails to teach or suggest a step of conducting a gaseous reagent comprising ozone through a first conduit residing in a bore hole and conducting a liquid reagent comprising hydrogen peroxide through a second conduit residing in said

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bore hole; ... ; forming hydroxyl radicals outside said bore hole by contacting of said gaseous and liquid reagents outside said bore hole. It would not have been obvious to someone of ordinary skill in the art at the time of the invention to provide a step of conducting a gaseous reagent comprising ozone through a first conduit residing in a bore hole and conducting a liquid reagent comprising hydrogen peroxide through a second conduit residing in said bore hole; ... ; forming hydroxyl radicals outside said bore hole by contacting of said gaseous and liquid reagents outside said bore hole because Buehlman et al does not suggest such a modification. Claims 36-38 and 95 depend on claim 35 and hence are also rejected.

Claim 39 is allowed for the reasons stated in the previous office action. Claims 40-66, and 97-104 depend on claim 39 and hence are also allowed.

Claims 18-20,23,25-34,67,69,71-94,96,105-108 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 1st paragraph, set forth in this Office action. Buehlman et al fails to teach or suggest a step of forming hydroxyl radicals outside said bore hole by contacting of said two or more reagents outside said bore hole, wherein at least one of the reagents is hydrogen peroxide.

### ***Response to Arguments***

Applicant's arguments with respect to claims 18-20,23,25-34,67,69,71-94,96,105-108 have been considered but are moot in view of the new grounds of rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

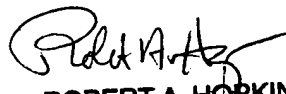
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert A. Hopkins whose telephone number is 571-272-1159. The examiner can normally be reached on Monday-Friday, 7am-4pm, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RAH  
February 15, 2006

  
ROBERT A. HOPKINS  
PRIMARY EXAMINER  
*RAH.1724*